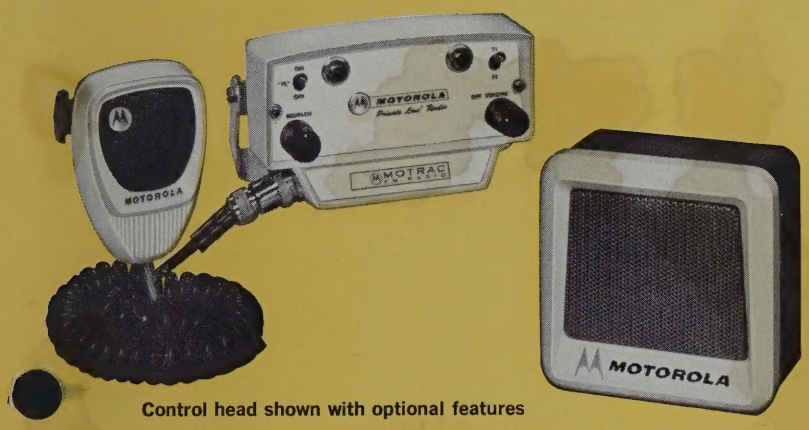
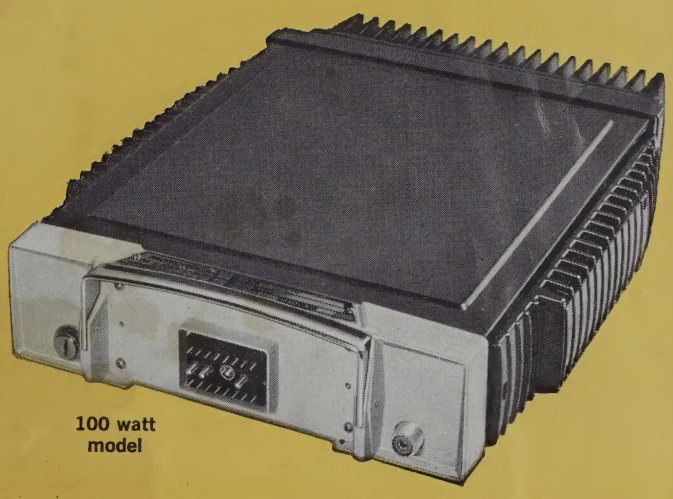
"MOTRAC" MOBILE FM TWO-WAY RADIO

25-50 MHz 40/60/100 watts RF Power; ±12 VDC



Control head shown with optional features



100 watt model

"MOTRAC" RADIO PROVIDES:

IMPROVED PERFORMANCE—These radios provide up to **100 watts** of output power to give you solid coverage and more square miles of operating range. Extremely low transmitter distortion results in clear, crisp transmissions. Solid-state ±0.0005% channel elements ensure precise frequency control at *all operating temperatures* without heated crystals; optional, interchangeable ±0.0002% channel elements may be used to obtain an even higher degree of system performance. Finally, the highly sensitive and selective receiver provides the best message reception available anywhere.

INCREASED RELIABILITY—The receiver, power supply and exciter are **100% Solid-State** for maximum dependability. The transmitter driver and final amplifier use only two, long life, heavy-duty industrial-rated tubes—operated at conservative levels to further increase their lives and dependability. You stay "on-the-air" with a "Motrac" radio.

RUGGED DESIGN—"Motrac" Radio's construction matches its dependable solid-state design: It is completely enclosed in heavy-gauge steel for maximum protection of components from dirt, dust, splashing water, and rough duty. Extra-heavy circuit boards are eyeletted at each connection point to provide the strongest possible solder joints. Components, mounted close to the boards, resist vibration and bending. The "Motrac" radio is built for the most demanding service.

LOW BATTERY DRAIN—The use of transistors and elimination of crystal heaters greatly reduce battery drain. In addition, a "battery-saver" circuit automatically switches off transmitter filaments if you turn off the ignition switch. You can leave the receiver on for days without idling the engine.

HIGH POWER AUDIO—Your drivers can hear messages in noisy environments, or when working away from their vehicles, because the "Motrac" radio delivers 5 watts of audio power at less than 10% distortion.

VERSATILITY—Here are some of the features and options that help you get the most from your "Motrac" radios:

- INSTALLATION—You can mount this compact unit in the trunk, under the dashboard, or in almost any convenient location. The radio is a drawer type unit, interchangeable between trunk and dash-mounted installations. The set locks into the permanently mounted frame to prevent theft or tampering.
- "PRIVATE-LINE" SQUELCH OPTION — Motorola's dependable, stable, tone-coded squelch minimizes the reception of messages from radio systems on your channel which do not have your tone frequency. Operator fatigue and the resulting missed or misunderstood messages are substantially reduced.
- TIME-OUT TIMER—Inadvertent prolonged keying of a transmitter can "lock-up" a repeater or tie up a channel. Motorola's Time-Out Timer option prevents that by shutting off the transmitter and emitting an alert tone if a transmission exceeds 60 seconds. Releasing the microphone button instantly resets the transmitter for normal operation.
- AUTOMATIC DIMMER—*Automatic* pilot lamp dimmer circuit continuously adjusts the intensity of the pilot lamp to a comfortable level under all external light conditions. At night, or in an underpass, the lamp will dim to a soft intensity which will not distract the driver. In daylight, the lamp will glow with full intensity.
- POSITIVE/NEGATIVE GROUND — An optional, internal plug-in kit provides quick and easy interchangeability between positive or negative ground systems.

"MOTRAC" MOBILE RADIO

PERFORMANCE SPECIFICATIONS

GENERAL

MODEL	MINIMUM RF POWER OUTPUT	MAXIMUM PLATE INPUT POWER	FREQUENCY	OPERATION	MAXIMUM BATTERY DRAIN**		
					Standby @ 13.8 v (xmtr. filaments off)	Receive @ 13.8 v (xmtr. filaments on)	Transmit
U41LHT-Series	40 watts	85 watts	25-50 MHz	12 VDC*	0.425 a.	1.3 a.	13.0 a. @ 13.6 v
U51LHT-Series	60 watts	120 watts			0.425 a.	1.3 a.	15.7 a. @ 13.6 v
U71LHT-Series	100 watts	180 watts			0.425 a.	1.8 a.	26.0 a. @ 13.4 v

*Radio supplied for operation with negative ground vehicles; optional kit available to permit interchangeable positive or negative ground operation.
**Add 0.14 amp for positive ground operation. Subtract 0.2 amp when radio is used without "on-off" pilot lamp.

NO. OF FREQUENCIES:	One-, two-, and up to four-frequency models available (four-frequency models: trunk mount only).
SQUELCH OPTIONS:	Carrier-squelch type—1000 Series Models (Split & Wide Channel) "Private-Line" tone coded squelch—3100 Series Models (Split-channel only)
DIMENSIONS:	**100 watt models:** Trunk Mount: 3¼" high x 13⅜" wide x 18¼" long Dash Mount: 4" high x 13⅜" wide x 19¾" long **40 and 60 watt models:** Trunk Mount: 3¼" high x 11¾" wide x 16¼" long Dash Mount: 4" high x 11¾" wide x 17¾" long
WEIGHT:	40 & 60 W: Approximately 25 lbs. (Shipping Weight, including accessories: approx. 45 lbs.) 100 W: Approximately 30 lbs. (Shipping Weight, including accessories: approx. 50 lbs.)
METERING:	A single-scale, 0-50 microampere meter or Motorola Portable Test Set can be used to measure all circuits essential to tuning and checking.

TRANSMITTER

RF Power Output:	40, 60 or 100 watts
Output Impedance:	50 ohms
Frequency Stability:	Channel element maintains oscillator frequency within ±.0005% (±.0002% optional) from −30°C to +60°C ambient (+25°C reference)
Spurious & Harmonics:	More than 85 db below carrier
Modulation:	16F3: ±5 KHz for 100% @ 1000 Hz. †36F3: ±15 KHz for 100% @ 1000 Hz.
Audio Sensitivity:	0.165 v. ± 3 db for ⅔ max. deviation at 1000 Hz.
FM Noise:	60 db below ⅔ rated deviation at 1000 Hz.
Audio Response:	+1, −3 db of 6 db/octave pre-emphasis characteristic from 300 to 3000 Hz.
Audio Distortion:	Less than 3% (split channel) and less than 5% (wide band) @ 1000 Hz; ⅔ max. deviation.

FCC Designation —	100 watts	60 watts	40 watts
one and two freq:	CC 1046	CC 1054	CC 1053
four freq:	CC 1056	CC 1058	CC 1057

NOTE 1: Licensable under FCC rules parts 21, 89, 91, and 93.
NOTE 2. ±.0002% models are designated by a "C" suffix (e.g. CC1046C. ±.0005% models have no suffix.

RECEIVER

	SPLIT CHANNEL	WIDE BAND
Channel Spacing:	20 KHz	40 KHz
EIA Modulation Acceptance:	±7 KHz minimum	±16 KHz minimum
Selectivity— EIA SINAD:	−85 db @ ±20 KHz	−85 db @ ±40 KHz
Sensitivity— 20 db Quieting:	0.35 μv	0.35 μv
EIA SINAD:	0.25 μv	0.25 μv

Input Impedance:	50 ohms
Frequency Stability:	Channel element maintains oscillator frequency within ±.0005% (±.0002% optional) from −30°C to +60°C ambient (+25°C reference)
EIA SINAD: Intermodulation:	−60 db
Spurious & Image Rejection:	More than 100 db
Squelch Sensitivity:	Carrier Squelch (adjustable): 0.15 μv or less at threshold. Tone-Coded Squelch (fixed): 0.15 μv or less
Audio Output:	5 watts at less than 10% distortion (into a 3 ohm load @ 1000 Hz.)

†36F3 modulation available only from 30-50 MHz.

Specifications subject to change without notice.

MOTOROLA COMMUNICATIONS AND ELECTRONICS, INC.
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(Replaces E-734G)